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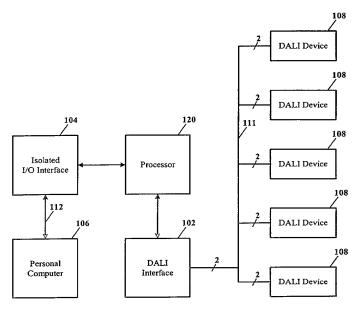
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#### **Declarations under Rule 4.17:**

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PII, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ,

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(54) Title: DIGITAL ADDRESSABLE LIGHTING INTERFACE BRIDGE



(57) Abstract: An interface bridge between a standard input-output (I/O) computer port and a Digital Addressable Lighting Interface (DALI) interface. The DALI bridge translates signal levels and protocol from the standard I/O computer interface port to the DALI signal levels and protocol, and visa-versa. A digital processor is used for protocol translation and message buffering. Signal level translation is used to properly connect to a computer port and the voltage levels of the two wire DALI bus. Using a standard computer for testing and control of a DALI compliant device and/or plurality of DALI compliant devices in a building lighting system is facilitated by the DALI bridge.





- VN, YU, ZA, ZM, ZW, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR)

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#### INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H04L12/28 H05B37/02 H05B37/03 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 HO4L HO5B Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) INSPEC, EPO-Internal C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. Category ° US 6 118 230 A (FLEISCHMANN MARC WERNER) 1 - 3Χ 17-26, 12 September 2000 (2000-09-12) 32 - 40column 2, line 39 -column 4, line 17; figure 1 column 10, line 17 -column 11, line 5; figure 8 US 6 181 086 B1 (KATYL ROBERT H ET AL) 1-3.χ 17-26. 30 January 2001 (2001-01-30) 32-40 column 4, line 49 -column 8, line 32; figures 1-14 Patent family members are listed in annex. Further documents are listed in the continuation of box C. Special categories of cited documents: T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-ments, such combination being obvious to a person skilled in the other. "O" document referring to an oral disclosure, use, exhibition or document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of mailing of the international search report Date of the actual completion of the international search 06/03/2003 21 February 2003 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016 Köppl, M

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Int Int Inal Application No
PCT/US 02/10193

C.(Continu	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ALONSO J M ET AL: "INTELLIGENT CONTROL SYSTEM FOR FLUORESCENT LIGHTING BASED ON LONWORKS TECHNOLOGY" IECON '98. PROCEEDINGS OF THE 24TH ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY. AACHEN, AUG. 31 - SEPT. 4, 1998, ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY, NEW YORK, NY: IEEE, US, vol. 1, 31 August 1998 (1998-08-31), pages 92-97, XP001003478 ISBN: 0-7803-4505-5 page X	1-40
A	TSANG P W M ET AL: "DEVELOPMENT OF A DISTRIBUTIVE LIGHTING CONTROL SYSTEM USING LOCAL OPERATING NETWORK" IEEE TRANSACTIONS ON CONSUMER ELECTRONICS, IEEE INC. NEW YORK, US, vol. 40, no. 4, 1 November 1994 (1994-11-01), pages 879-889, XP000495826 ISSN: 0098-3063 the whole document	
P,X	CONTENTI C: "Digitally addressable DALI dimming ballast"  APEC 2002. 17TH. ANNUAL IEEE APPLIED POWER ELECTRONICS CONFERENCE AND EXPOSITION. DALLAS, TX, MARCH 10 - 14, 2002, ANNUAL APPLIED POWER ELECTRONICS CONFERENCE, NEW YORK, NY: IEEE, US, vol. 2 OF 2. CONF. 17, 10 March 2002 (2002-03-10), pages 936-942, XP010583030  ISBN: 0-7803-7404-5 the whole document	1-40

## INTERNATIONAL SEARCH REPORT

Inte nal Application No
PCT/US 02/10193

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 6118230	Α	12-09-2000	NONE		
US 6181086	B1	30-01-2001	US	6388396 B1	14-05-2002